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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/724,101	12/01/2003	Tadahiro Ohmi	SUGI0137	5532

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EXAMINER

LEUNG, JENNIFER A

ART UNIT	PAPER NUMBER
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1764

DATE MAILED: 05/10/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/724,101	OHMI ET AL.	
	Examiner	Art Unit	
	Jennifer A. Leung	1764	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 November 2005 and 13 March 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 7,9,11,13,15,17 and 19 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 7,9,11,13,15,17 and 19 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 November 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☒ Certified copies of the priority documents have been received in Application No. 09/773,605.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>11-30-05</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

1. Applicant's response(s) submitted on November 30, 2005 and March 13, 2006 have been received and carefully considered. The changes made to the specification and drawings are acceptable. Claims 1-6, 8, 10, 12, 14, 16, 18 and 20 are cancelled. Claims 7, 9, 11, 13, 15, 17 and 19 are under consideration.

Response to Arguments

2. Applicant's arguments filed November 30, 2005 and March 13, 2006 have been fully considered but they are not persuasive.

Comments regarding the rejections under 35 U.S.C. § 103

Applicants (the middle of page 6, in the response filed March 13, 2006) argue,

“... the present application and Ohmi ‘667 were commonly owned by, or subject to an obligation of assignment to, Fujikin, Inc. and Tadahiro Ohmi at the time the invention was made... Therefore, in accordance with 35 U.S.C. § 103(c) and MPEP 706.02(I)(2), Applicants have provided sufficient evidence to establish that, because both the present application and Ohmi ‘667 were commonly owned at the time the invention was made, Ohmi ‘667 cannot be used as prior art against the present claims under 35 U.S.C. § 103.”

The Examiner respectfully disagrees. Ohmi ‘667 is European Patent 0 922 667, published on June 16, 1999. The 35 U.S.C. § 103(c) exclusion applies only to prior art under 35 U.S.C. § 102(e), (f) or (g). In the instant case, Ohmi ‘667 was published at least one year prior to the effective U.S. filing date of the instant application (based on a filing date of February 2, 2001 in the parent application 09/773,605), and therefore the Ohmi ‘667 reference qualifies as prior art under 35 U.S.C. § 102(b).

Applicants (page 7, first and third paragraphs) further argue,

“Hishikari teaches an electronic cooling element (5) to cool a soaking plate (2) through a heater (4), held together with a holding member (6) having a radiation fin (7) on the back. The fin (7) in Hishikari acts to increase the cooling performance of the electronic cooling element (5) which is a Peltier device, and does not serve to cool a reactor chamber.” ...

“The Examiner has cited that Ohmi ‘667 teaches “a cooling unit will be activated,” but a fin is a passive radiator and so cannot be activated. One of ordinary skill in the art would neither (1) be inclined to substitute a fin for activatable cooler, nor (2) expect that the device would operate properly with such a substitution.”

The Examiner respectfully disagrees. Peltier devices, i.e., thermoelectric cooling and heating elements, are well known *active* temperature control devices. In Hishikari, this device functions to control the temperature of a cavity 1, via conduction of heat through the soaking plate 2. The *active* cooling function is provided by the electronic cooling element 5, which is powered by a current adjusted by a control means C (see FIG. 1). The fin 7 merely enhances the cooling provided by the active, electronic cooling element 5.

The Examiner further submits the references of Cohen et al., Cave, and Kraus to further illustrate the conventional operation of Peltier devices.

Cohen et al. (FIGs. 1-3) illustrates the transfer of heat Q either to an enclosure 1/11 (i.e., $+Q$ for heating) or from an enclosure 1/11 (i.e., $-Q$ for cooling) by the reversal of a current I supplied to a Peltier device 2/12/12'. Fins 5/6/15/15' are further provided to enhance the effects of heat transfer with the ambient.

Cave (FIG. 3-6) illustrates a reaction plate 4 that is directly heated by a resistive heater 14 and cooled by a Peltier device 13. The provision of fins 11 on heat sink 8 enhances the heat transfer with the ambient, in combination with fans 9 and 10.

Kraus (page 1667, section 54.3) illustrates that the use of fins and Peltier devices for active temperature control is well known in the art. Section 54.3.1 provides a general discussion on the control of temperature using extended surfaces and heat sinks, i.e., fins. Section 54.3.3 provides a generally discussion on the control of temperature using thermoelectric coolers, i.e., Peltier devices. The reversible evolution or absorption of heat occurs when an electric current traverses the junction between two dissimilar materials. The Peltier heat absorbed or rejected depends on and is proportional to the current flow.

Applicants (page 7, second paragraph) further argue,

“The Examiner has not identified any motivation to combine the cited references. The combination of Ohmi ‘667 with Hishikari is not a “duplication of part[s]” as described by the Examiner... and rings of impermissible hindsight.”

The “duplication of parts” applied to the provision of the heater and cooling unit of Hishikari et al. on both the outside walls of the first and the second component 2, 3 in the apparatus of Ohmi et al. As cited in the rejection, the duplication of part was held to have been obvious. *St. Regis Paper Co. v. Beemis Co. Inc.* 193 USPQ 8, 11 (1977); *In re Harza* 124 USPQ 378 (CCPA 1960). Cohen et al., for instance, further evidences that it is well known in the art to provide duplicate heating and cooling units (i.e., units 12/12’ and 15/15’ on the external surface of enclosure 11; FIG. 3). In response to applicant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the

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applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971). In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, the duplication of parts is knowledge generally available to one of ordinary skill in the art.

Comments regarding the Obviousness-type Double Patenting Rejection over U.S. Patent

Application No. 09/905,209 (now U.S. Patent No. 6,919,056) in view of secondary references

Applicants (beginning at the bottom of page 8) present a table identifying various differences between the present application and U.S. Patent No 6,919,056. It is noted, however, that the claims of the present application generally “dominate” the claims of U.S. Patent 6,919,056 because the structures recited in the claims of the present application are broader in scope than the structures recited in the claims of U.S. Patent 6,919,056. Therefore, the claims of the present application, as modified by the teachings of Hishikari et al. as well as the other secondary references, fully encompass or read on the invention defined in the more specific claims of U.S. Patent 6,919,056. Furthermore, regarding the recitation of an “outside wall” for each of the first and second reactor structural components, one having ordinary skill in the art would have understood that the components inherently comprised an outside wall, i.e., an exterior surface.

Comments regarding the Obviousness-type Double Patenting Rejection over U.S. PatentApplication No. 10/884,917 in view of secondary references

Applicants (beginning at the bottom of page 10) present a table identifying various differences between the present application and U.S. Application No 10/884,917. It is noted, however, that the claims of the present application generally “dominate” the claims of U.S. Application No 10/884,917 because the structures recited in the claims of the present application are broader in scope than the structures recited in the claims of U.S. Application No 10/884,917. Therefore, the claims of the present application, as modified by the teachings of Hishikari et al. as well as the other secondary references, fully encompass or read on the invention defined in the more specific claims of U.S. Application No 10/884,917.

Claim Rejections - 35 USC § 103

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

3. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ohmi et al. (EP 0 922 667) in view of Hishikari et al. (JP 63-138220).

Ohmi et al. (FIGs. 8-10; sections [0035] to [0054]) discloses a reactor 1 for generating moisture, having an inlet side and an outlet side, comprising:

a first reactor structural component 2 on the inlet side of the reactor 1 having an outside wall, and a second reactor structural component 3 on the outlet side of the reactor 1 having an outside wall, wherein the first and second components 2,3 are mated for form a reactor shell having an interior space 1a; (see figures);

a material gas supply passage 2c provided in the first reactor structural component 2

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disposed to supply material gases into the interior space 1a; and a material gas supply joint 4 connected to the material gas supply passage 2c; (see figures); and

a moisture gas outlet passage 3c provided in the second reactor structural component 3 to lead out moisture from the interior space 1a; and a moisture gas take-out joint 5 connected to the moisture gas outlet passage 3c; (see figures).

Ohmi et al. (section [0038]) further discloses,

“Reactor 1 is provided with *a heater* and, as necessary, *a cooling unit* so that if the reaction heat pushes up the temperature in the reactor in operation to over 500 °C (which rarely happens, though), the cooling unit will be activated to bring the temperature down below 500 °C.”

Ohmi et al. is silent as to a cooling unit comprising fin base plates attached to the outside walls of the first and second components 2,3 and a plurality of fins disposed on the fin base plates. Ohmi et al. is further silent as to a heater being disposed on the outside wall of the second component 3, including a heater pressing plate disposed on an outside of the heater, wherein the fin base plate is attached to an outside of the heater pressing plate.

Hishikari (Figure; Abstract) teaches an apparatus comprising a heater 4 and a cooling unit for controlling the temperature of a chamber 1. The cooling unit comprises a fin base plate (i.e., not separately labeled; the portion of fins 7 adjacent to holding element 6) and a plurality of fins 7 disposed on the fin base plate. The heater 4 is disposed on the outside wall of the chamber 1, with a heater pressing plate (i.e., electronic cooling element 5) disposed on the outside of the heater 4, and the fin base plate/fins 7 attached on the outside of the heater pressing plate 5.

It would have been obvious for one of ordinary skill in the art at the time the invention was made to substitute the heater and cooling unit of Hishikari et al. for the heater and cooling

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unit in the apparatus of Ohmi et al., on the basis of suitability for the intended use and absent showing any unexpected results thereof, because the substitution of known equivalent structures for providing the same function of heating and cooling involves only ordinary skill in the art. *In re Fout* 213 USPQ 532 (CCPA 1982); *In re Susi* 169 USPQ 423 (CCPA 1971); *In re Siebentritt* 152 USPQ 618 (CCPA 1967); *In re Ruff* 118 USPQ 343 (CCPA 1958). It would have also been obvious for one of ordinary skill in the art at the time the invention was made to provide the heater and cooling unit of Hishikari et al. on both the outside walls of the first and the second component 2, 3 in the apparatus of Ohmi et al., on the basis of suitability for the intended use and absent showing any unexpected results thereof, because the duplication of part was held to have been obvious. *St. Regis Paper Co. v. Beemis Co. Inc.* 193 USPQ 8, 11 (1977); *In re Harza* 124 USPQ 378 (CCPA 1960).

4. Claims 9, 11, 13, 15 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ohmi et al. (EP 0 922 667) in view of Hishikari et al. (JP 63-138220), as applied to claim 7 above, and further in view of Nelson et al. (US 3,180,404).

Regarding claims 9 and 11, the collective teaching of Ohmi et al. and Hishikari et al. is silent as to the heat dissipation fins being disposed symmetrically about the material gas supply joint 4 and the moisture gas take-out joint 5. Nelson et al. (FIG. 1-4; column 1, line 70 to column 2, line 23) teaches a plurality of parallel, spaced heat dissipation fins 22 being disposed symmetrically about a central location (i.e., at opening 24) located on the fin base plate 21. It would have been obvious for one of ordinary skill in the art at the time the invention was made to dispose the heat dissipation fins symmetrically about the material gas supply joint 4 and the moisture gas take-out joint 5 in the modified apparatus of Ohmi et al., on the basis of suitability

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for the intended use and absent showing any unexpected results thereof, because disposing the fins according to such a configuration provides for an even distribution of heat and for an equal heat transfer effect irrespective of the direction of coolant flow from end to end of the finned structure, as taught by Nelson, et al. (column 2, lines 13-23).

Regarding claims 13 and 15, the collective teaching of Ohmi et al. and Hishikari et al. is silent as to the fins being disposed axially symmetrical about the material gas supply joint 4 and the moisture take-out joint 5. Nelson et al. (FIG. 1-4; column 1, line 70 to column 2, line 23) teaches a plurality of parallel, spaced heat dissipation fins 22 being disposed axially symmetrically about a central location (i.e., at opening 24) located on the fin base plate 21. It would have been obvious for one of ordinary skill in the art at the time the invention was made to dispose the fins axially symmetrical about the material gas supply joint 4 and the moisture gas take-out joint 5 in the modified apparatus of Ohmi et al., on the basis of suitability for the intended use and absent showing any unexpected results thereof, because disposing the fins according to such a configuration provides for an even distribution of heat and for an equal heat transfer effect irrespective of the direction of coolant flow from end to end of the finned structure, as taught by Nelson, et al. (column 2, lines 13-23).

Regarding claim 17, the collective teaching of Ohmi et al. and Hishikari et al. is silent as to the fins being disposed centrally symmetrical about the moisture take-out joint 5. Nelson et al. (FIG. 1-4; column 1, line 70 to column 2, line 23) teaches a plurality of parallel, spaced heat dissipation fins 22 being disposed centrally symmetrically about a central location (i.e., at opening 24) located on the fin base plate 21. It would have been obvious for one of ordinary skill in the art at the time the invention was made to dispose the fins centrally symmetrical about

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the moisture take-out joint 5 in the modified apparatus of Ohmi et al., on the basis of suitability for the intended use and absent showing any unexpected results thereof, because disposing the fins according to such a configuration provides for an even distribution of heat and for an equal heat transfer effect irrespective of the direction of coolant flow from end to end of the finned structure, as taught by Nelson, et al. (column 2, lines 13-23).

5. Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ohmi et al. (EP 0 922 667) in view of Hishikari et al. (JP 63-138220), as applied to claim 7, and further in view of Asanuma et al. (US 4,369,838).

The collective teaching of Ohmi et al. and Hishikari et al. is silent as to the heat dissipation fins comprising surfaces treated with alumite.

Asanuma et al. teaches heat dissipation fins comprising surfaces treated with alumite (i.e., by subjecting the fins to a sulfuric acid alumite-black dyeing treatment; column 5, lines 5-45).

It would have been obvious for one of ordinary skill in the art at the time the invention was made to treat the surfaces of the heat dissipation fins with alumite in the modified apparatus of Ohmi et al., on the basis of suitability for the intended use, because subjecting the surfaces of the fins to a sulfuric acid alumite-black dyeing treatment improves the heat releasing efficiency of the fins, in comparison to uncolored fins, as taught by Asanuma et al.

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686

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F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

6. Claim 7 is rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-10 of U.S. Patent No. 6,919,056 in view of Hishikari et al. (JP 63-138220). (Claim 7 was previously *provisionally* rejected over claims 1-12 of copending Application No. 09/905,209).

U.S. '056 substantially claims the instantly claimed apparatus, said apparatus comprising a reactor structural component on the inlet side and a reactor structural component on the outlet side, wherein the reactor structural components are mated to form a reactor shell having an interior space; a gas feed (i.e., material gas supply) port engaged with the reactor structural component on the inlet side; a moisture take out port engaged with the reactor structural component on the outlet side. In particular, U.S. '056 claims, "a cooler for cooling said reactor shell" wherein "said cooler is cooling fins fixed on the outer surface of the reactor shell." (see claims 9-10). Also, U.S. '056 claims, "a temperature regulator for heating and maintaining the temperature at a specific level; and wherein said temperature regulator is provided on the outside walls of said reactor structural component on the inlet side and said reactor structural component on the outlet side." (see claim 8). U.S. '056 is silent as to specific structure of the fins and heater

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as instantly recited in claim 7. Hishikari et al., however, teaches the recited structure of the fins and heater, (the same comments of Hishikari et al. apply). It would have been obvious for one of ordinary skill in the art at the time the invention was made to substitute the heater and cooling unit of Hishikari et al. for the temperature regulator and cooler, respectively, in the apparatus of U.S. '056, on the basis of suitability for the intended use and absent showing any unexpected results thereof, because the substitution of known equivalent structures for providing the same function of heating and cooling involves only ordinary skill in the art. *In re Fout* 213 USPQ 532 (CCPA 1982); *In re Susi* 169 USPQ 423 (CCPA 1971); *In re Siebentritt* 152 USPQ 618 (CCPA 1967); *In re Ruff* 118 USPQ 343 (CCPA 1958).

7. Claims 9, 11, 13, 15 and 17 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-10 of U.S. Patent No. 6,919,056 in view of Hishikari et al. (JP 63-138220), as applied to claim 7 above, and further in view of Nelson et al. (US 3,180,404). (Claims 9, 11, 13, 15 and 17 were previously *provisionally* rejected over claims 1-12 of copending Application No. 09/905,209).

The collective teaching of U.S. '056 and Hishikari et al. is silent as to claiming the instantly recited symmetrical fin configurations of claims 9, 11, 13, 15 and 17. Nelson et al., however, teaches the recited symmetrical fin configurations, (the same comments of Nelson et al. apply). It would have been obvious for one of ordinary skill in the art at the time the invention was made to dispose the fins according to the recited symmetrical fin configurations in the modified apparatus of U.S. '056, on the basis of suitability for the intended use and absent showing any unexpected results thereof, because disposing the fins according to such configurations provide for an even distribution of heat and for an equal heat transfer effect

irrespective of the direction of coolant flow from end to end of the finned structure, as taught by Nelson, et al. (column 2, lines 13-23).

8. Claim 19 is rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-10 of U.S. Patent No. 6,919,056 in view of Hishikari et al. (JP 63-138220), as applied to claim 7 above, and further in view of Asanuma et al. (US 4,369,838). (Claim 19 was previously *provisionally* rejected over claims 1-12 of copending Application No. 09/905,209).

The collective teaching of U.S. '056 and Hishikari et al. is silent as to claiming the fins comprising surfaces treated with alumite. Asanuma et al. teaches fins comprising surfaces treated with alumite, (the same comments of Asanuma et al. apply). It would have been obvious for one of ordinary skill in the art at the time the invention was made to treat the surfaces of the heat dissipation fins with alumite in the modified apparatus of U.S. '056, on the basis of suitability for the intended use, because subjecting the surfaces of the fins to a sulfuric acid alumite-black dyeing treatment improves the heat releasing efficiency of the fins, in comparison to uncolored fins, as taught by Asanuma et al.

9. Claim 7 is provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 3-13 of copending Application No. 10/884,917 in view of Hishikari et al. (JP 63-138220). This is a provisional obviousness-type double patenting rejection.

Copending Application '917 substantially claims the instantly claimed apparatus, said apparatus comprising a reactor structural component on the inlet side and a reactor structural component on the outlet side, wherein the reactor structural components are mated to form a

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reactor shell having an interior space; a gas feed (i.e., material gas supply) port engaged with the reactor structural component on the inlet side; a moisture take out port engaged with the reactor structural component on the outlet side. (see claim 3). In particular, Application '917 claims, "a cooler for cooling said reactor shell" wherein "said cooler is cooling fins fixed on the outer surface of the reactor shell." (see claims 11 and 12). Also, Application '917 claims, "a temperature regulator for heating and maintaining the temperature at a specific level; and wherein said temperature regulator is provided on the outside walls of said reactor structural component on the inlet side and said reactor structural component on the outlet side." (see claim 10). Application '917 is silent as to specific structure of the fins and heater as instantly recited in claim 7. Hishikari et al., however, teaches the recited structure of the fins and heater, (the same comments of Hishikari et al. apply). It would have been obvious for one of ordinary skill in the art at the time the invention was made to substitute the heater and cooling unit of Hishikari et al. for the temperature regulator and cooler, respectively, in the apparatus of Application '917, on the basis of suitability for the intended use and absent showing any unexpected results thereof, because the substitution of known equivalent structures for providing the same function of heating and cooling involves only ordinary skill in the art. *In re Fout* 213 USPQ 532 (CCPA 1982); *In re Susi* 169 USPQ 423 (CCPA 1971); *In re Siebentritt* 152 USPQ 618 (CCPA 1967); *In re Ruff* 118 USPQ 343 (CCPA 1958).

10. Claims 9, 11, 13, 15 and 17 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 3-13 of copending Application No. 10/884,917 in view of Hishikari et al. (JP 63-138220), as applied to claim 7 above, and further in view of Nelson et al. (US 3,180,404). This is a provisional

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obviousness-type double patenting rejection.

The collective teaching of Application '917 and Hishikari et al. is silent as to claiming the instantly recited symmetrical fin configurations of claims 9, 11, 13, 15 and 17. Nelson et al., however, teaches the recited symmetrical fin configurations, (the same comments of Nelson et al. apply). It would have been obvious for one of ordinary skill in the art at the time the invention was made to dispose the fins according to the recited symmetrical fin configurations in the modified apparatus of Application '917, on the basis of suitability for the intended use and absent showing any unexpected results thereof, because disposing the fins according to such configurations provide for an even distribution of heat and for an equal heat transfer effect irrespective of the direction of coolant flow from end to end of the finned structure, as taught by Nelson, et al. (column 2, lines 13-23).

11. Claim 19 is provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-13 of copending Application No. 10/884,917 in view of Hishikari et al. (JP 63-138220), as applied to claim 7 above, and further in view of Asanuma et al. (US 4,369,838). This is a provisional obviousness-type double patenting rejection.

The collective teaching of Application '917 and Hishikari et al. is silent as to claiming the fins comprising surfaces treated with alumite. Asanuma et al. teaches fins comprising surfaces treated with alumite, (the same comments of Asanuma et al. apply). It would have been obvious for one of ordinary skill in the art at the time the invention was made to treat the surfaces of the heat dissipation fins with alumite in the modified apparatus of Application '917, on the basis of suitability for the intended use, because subjecting the surfaces of the fins to a sulfuric acid

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alumite-black dying treatment improves the heat releasing efficiency of the fins, in comparison to uncolored fins, as taught by Asanuma et al.

Conclusion

12. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

* * *

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jennifer A. Leung whose telephone number is (571) 272-1449. The examiner can normally be reached on 9:30 am - 5:30 pm Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn A. Caldarola can be reached on (571) 272-1444. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Jennifer A. Leung
May 4, 2006 *JAL*

Alexa Neckel
ALEXA DOROSHENK NECKEL
PRIMARY EXAMINER